

REMARKS
ELECTION/RESTRICTION

The Examiner has required restriction to one of the following inventions as required under 35 U.S.C. 121:

Group I, claims 1-22 and 73-94, drawn to a coating composition, classified in class 523, subclass 415;

Group II, claims 23-70 and 95-118, drawn to a coating process, classified in class 204, subclass 484;

Group III, claim 71, drawn to a coating composition, classified in class 523, subclass 415; and

Group IV, claim 72, drawn to a coating process, classified in class 204, subclass 471+.

During a telephone conversation on April 22, 2004, Applicants' representative elected with traverse to prosecute the process claims of Group II.

Applicants now respectfully traverse the restriction requirement with respect to the claims of Group II and Group IV because, since the subject matter of claim 72 is merely a subset of the subject matter of claim 23, i.e., the subject matter of claim 72 is within the scope of claim 23, a search for the subject matter of claim 23 et seq. would be coextensive with that for claim 72. Moreover, as the Examiner has indicated, the claims of Groups II and IV are both in class 204. Hence reconsideration and withdrawal of the restriction requirement as to the claims of Groups II and IV is respectfully requested. Therefore, it would not be unduly burdensome for the Examiner to consider the claims of Groups II and IV together.

If, however, the Examiner maintains the restriction requirement, Applicants hereby affirms the election to prosecute the claims of Group II, claims 23-70 and 95-118, without prejudice for the filing of a divisional application to recapture the subject matter of non-elected claims at a future date.

STATUS OF CLAIMS

Claims 1-118 are pending in the present application.

Claims 23-70 and 95-118 stand rejected.

Claims 1-22 and 71-94 have been withdrawn from consideration.

Claims 28, 29, 34, 50, 51, 103-105, and 110 are cancelled by this amendment.

CLAIM REJECTIONS UNDER 35 U.S.C. 103:

Claims 95-118 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,398,934 to Klein et al. ("Klein") in view of US 5,096,555 to Schupp et al. ("Schupp").

The Examiner asserts that Klein discloses the preparation of a cathodic electrodeposition coating composition comprising a binder component of an aqueous dispersion of a cathodically depositable binder having functional groups comprising active hydrogens that are crosslinkable using blocked polyisocyanate, and a crosslinking component of a blocked polyisocyanate. The Examiner further states that Klein discloses that the binder is a cationic sulfonium salt group-containing resin at the crosslinking component can be in a form neutralized with acid. The Examiner also notes that in Example 3 of Klein, the electrocoating process uses the concentrate in diluted form and includes a curing step. The Examiner states that Klein is virtually silent in regards to the use of a cationic amine salt group [containing material] as the curing agent.

The Examiner relies on the disclosure of Schupp to provide the cationic amine salt group-containing curing agent, and asserts that in view of Schupp's curing agent, it would have been obvious to substitute the curing agent of Schupp for that of Klein to arrive at the claimed invention. Applicants respectfully traverse this rejection.

First, Klein does indeed disclose a crosslinking agent having cationic amino salt groups. At column 3, line 7 to column 4, line 46, Klein describes the crosslinking component and its preparation. The crosslinking component of Klein is an anhydrous organic solution of an oxime-blocked isocyanate-functional reaction product of an *aromatic* polyisocyanate and *at least one compound having a*

group capable of addition towards isocyanate and at least one tertiary amino group (such as amino alcohols disclosed at col. 3, lines 42-51). The crosslinking component can comprise the crosslinking agent in a non-neutralized form or in a form neutralized with acid (see col. 4, lines 38-46). Thus the acid forms an amine salt group with the amino group of the aminoalcohol once the components are combined and diluted to form an electrodeposition bath.

More importantly, the crosslinking agent of Klein is limited to **aromatic** polyisocyanates. Klein specifically teaches a cationic electrodeposition coating concentrate that is used to form a composition curable at low stoving temperatures, and therefore uses an aromatic polyisocyanate, while overcoming the instability problems that are typically associated with pressure build up due to decomposition of the usual blocked aromatic isocyanates that are blocked with oximes (see col. 1, lines 33-63). Klein discloses that it is essential that the resin component and the crosslinking component remain separate until just prior to use, and that the crosslinking component be in anhydrous form until just prior to use.

Schupp discloses the use of tertiary amine salt group- or quaternary ammonium salt group-containing polyisocyanates in combination with an amine salt or ammonium salt group-containing binder. The polyisocyanates of Schupp may also contain quaternary phosphonium groups and tertiary sulfonium groups. Such curing agents are blocked and then dispersed in water prior to combining with the resin component to form the electrodeposition bath.

Applicants' independent claims 23, 45, 66, and 95 have been amended to limit the curing agent(s) used in the electrodepositable coating compositions applied in the claimed processes to **aliphatic polyisocyanates** comprising cationic amine salt groups or groups capable of forming cationic amine salt groups which are derived from **primary** amine groups. Claims dependent from these independent claims have been amended to reflect corrected claim dependencies and/or to clarify claim language.

Applicants assert that there would have been no motivation to combine the Klein reference as discussed above with Schupp because the object of Klein was to

overcome problems associated with the use of oxime-blocked aromatic polyisocyanates for use as a crosslinking component in a low temperature cure electrodeposition coating composition. In fact, Klein would seem to teach away from using the blocked polyisocyanates, particularly the aromatic isocyanates described in Schupp because such materials, which are dispersed in water are unstable upon storage and shipment.

Moreover, assuming, *arguendo*, that one skilled in the art would look to Schupp to substitute the dispersible blocked polyisocyanate of Schupp for the blocked polyisocyanate of Klein, one would still fail to achieve the process of Applicants' claims as amended. Applicants' claims as amended require that the curing agent comprise an aliphatic polyisocyanate having cationic amine salt groups, or groups capable of forming amine salt groups, where the amine salt groups are derived from primary amine groups. Therefore, even if the aromatic polyisocyanate of Klein were replaced by the aliphatic polyisocyanate disclosed in Schupp, the cationic salt groups present in the curing agent of Schupp are tertiary amine salt group- or quaternary ammonium salt group-containing polyisocyanates, or those that contain quaternary phosphonium groups and tertiary sulfonium groups. Schupp is devoid of teaching whereby the aliphatic polyisocyanate curing agent comprises cationic amine groups derived from primary amine groups.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 95-118 under 35 U.S.C. 103(a) based on Klein in view of Schupp.

In view of the above-described amendments and the foregoing remarks, the Examiner's rejections as to dependent claims 101, 115 and 116 are now moot, as they are with respect to claims 110 and 111 which are now cancelled. Reconsideration and withdrawal of the rejection of these claims is respectfully requested.

With respect to the Examiner's rejection of claim 117, the Examiner states that Klein discloses that the coating layer can be deposited as a primer with sufficient electrical conductivity. However, the Examiner has obviously mis-read claim 117. Claim 117

is directed to the process of claim 95, where the electrodepositable coating composition is in the form of an electrodeposition bath, where the bath, and not the deposited coating, has a specified conductivity. That is, the conductivity is a measurable physical property of the electrodeposition bath and not of the deposited coating (see conductivity values listed in the Example Tables 1 and 2 at page 49 of the specification). In view of the foregoing amendments and remarks, reconsideration and withdrawal of the rejection of claim 117 is respectfully requested.

Claims 23-28, 31-50 and 53-65 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Klein in view of Schupp and US 5,385,962 to Corrigan et al. ("Corrigan"). The Examiner states that Klein as applied above, further discloses further steps of depositing coating layers after curing of the electrodeposition coating layer. The Examiner asserts that the further difference between Klein and the present claims is the detail of curing the top coat layer, however, Corrigan shows that detail. Hence, the Examiner contends that the subject matter as a whole would have been obvious to have modified Klein's teachings as shown by Corrigan because this would result in curing a coating layer after applying the layer.

Further, as to claim 24, and claims 45-50 and 53-65, the Examiner notes that Corrigan shows the heating of the coating layer can be done by any convenient method such as by baking or with banks of infrared lamps, and the latter would not involve combustion. As such the Examiner contends that the selection of any of known equivalent heatings would have been within the level of ordinary skill in the art.

As mentioned above, a combination of Klein and Schupp does not achieve the process of Applicants' claims as amended, and the teaching of Corrigan cannot overcome the deficiencies of such a combination. Hence, reconsideration and withdrawal of the rejection of claims 23-28, 31-50 and 53-65 under 35 U.S.C. 103(a) based on Klein in view of Schupp and Corrigan is respectfully requested.

Claims 29, 30, 51 and 52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Klein in view of Schupp and/or Corrigan as applied above, and

further in view of JP 2000-281943A ("the JP reference"). The Examiner states that the difference between the references as applied previously and the instant claims is the provision that the curing agent comprises a partially blocked aliphatic polyisocyanate, and the JP reference shows such an aliphatic curing agent in an electrocoating process. The Examiner asserts that the JP reference shows the use of the aliphatic polyisocyanate in an electrocoating process. Thus, he states that the subject matter as a whole would have been obvious on one skilled in the art to have modified Klein in view of Schupp and/or Corrigan as suggested by the JP reference.

As indicated above, Applicants' claims have been amended to clarify that the curing agent is an aliphatic polyisocyanate curing agent comprising cationic amine salt groups or groups capable of forming such salt groups, where the amine salt groups are derived from primary amino groups. However, the JP reference discloses the use in cationic electrodeposition compositions of standard aliphatic blocked polyisocyanate curing agents. There is no teaching or suggestion that such curing agents comprise the cationic amine salt groups or groups capable of forming amine salt groups, such groups being derived from primary amine groups, as are required by Applicants' claims as amended. Consequently, none of the cited references, neither singly nor in any combination disclose, teach or suggest the use of aliphatic polyisocyanate curing agents having cationic amine salt groups which have been derived from primary amine groups. Therefore, reconsideration and withdrawal of the rejection of claims 29, 30, 51 and 52 under 35 U.S.C. 103(a) based on Klein in view of Schupp and/or Corrigan in further in view of the JP reference is respectfully requested.

Claims 66, 67, 69 and 70 stand rejected under 35 U.S.C. 103(a) based on Klein in view of Schupp and US 4,621,420 to Takahashi et al. ("Takahashi"). The Examiner alleges that the further difference between the references as applied previously and the claimed process is the inclusion in the circuit of a non-ferrous anode. The Examiner notes that Takahashi shows it is known to avoid the release of metal ions from the anode in an electrocoating process. Hence the subject matter as a whole would have been obvious to have modified the teaches of the references as suggested by Takahashi because this would prevent metal ions from dissolving out of the anode into the electrodeposition bath. Applicants assert that in view of the

foregoing amendments and remarks, this rejection of claims 66, 67, 69 and 70 is now moot. Reconsideration and withdrawal of the rejection of claims 66, 67, 69 and 70 on these grounds is respectfully requested.

Claim 68 stands rejected under 35 U.S.C. 103(a) based on Klein in view of Schupp and Takahashi as applied immediately above in further view of Corrigan. The Examiner states that the difference between the references as applied above and the instant claim is the heating in a specified atmosphere as is claimed in claims 52 and 53. The Examiner contends that Corrigan shows that the heating can be done by any convenient method such as by baking in an oven or with banks of infrared heat lamps. As such, since the heating with the latter would be in an atmosphere of the type recited in the claim, selection of any known equivalent heatings would have been within the level of ordinary skill in the art. Applicants assert that the rejection of claim 68 on this basis is now moot in view of the foregoing amendments and remarks. Reconsideration and withdrawal of claim 68 is respectfully requested.

Therefore, in view of the foregoing amendments and remarks, withdrawal of the claim rejections is respectfully requested. The Examiner will be contacted for a telephonic interview on Wednesday, August 25, 2004, to discuss the proposed amendment.

Respectfully submitted,



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